Date: Friday, 02/05/2008 10:47:44 AM
User: Julie Lecocq

Process Sheet

Customer : CU-DAR001 Dart Helicopters Services
Job Number : 38994
Estimate Number : 10372
P.O. Number :
This Issue : 02/05/2008 **S.O. No.** :
Prsht Rev. : NC
First Issue : / /
Previous Run : 37879
Written By :
Checked & Approved By : JLO 08.5.02
Comment : Est. A04.02.09 New issue KJ/DS
Est Rev:B ECN 1060 07-11-12 DD verified by:EC

Drawing Name : BOLT
Part Number : D312121
Drawing Number : D3121 REV E
Project Number : N/A
Drawing Revision : E
Material :
Type : MACHINED PARTS
Due Date : 15/05/2008 **Qty:** ~~60~~ 50 **Um:** Each

Additional Product

Job Number:

Seq. #:	Machine Or Operation:	Description :
1.0	M303H0500	303 HEX BAR

Comment: Qty.: 0.0417 f(s)/Unit Total : 2.5020 f(s)
303 HEX BAR
Material: AISI 303 SS 1/2" Hex Bar
(M303H0.500)
Batch: 106789 RP 08/05/04

2.0	HARDINGE	HARDINGE CNC LATHE SMALL

Comment: HARDINGE CNC LATHE SMALL
1-Turn D3121-21
2-Identify as D3121-21
3-Deburr break all sharp edges 0.005" to 0.010" RP 08/05/04

3.0	QC2	INSPECT PARTS AS THEY COME OFF MACHINE

Comment: INSPECT PARTS AS THEY COME OFF MACHINE RP 08/05/04 (58)

4.0	QC8	SECOND CHECK

Comment: SECOND CHECK RP 08/05/04 (58)

5.0	PACKAGING 1	PACKAGING RESOURCE #1

Comment: PACKAGING RESOURCE #1
Identify and Stock Location: ST66 RP 5/7 (58)

Form: rprocess

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

QA: N/C Closed: _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	**STEP**	**Description of NC** Section A	**Corrective Action** Section B			**Verification** Section C	**Approval** Chief Eng	**Approval** QC Inspector
			Initial Chief Eng	**Action Description** Chief Eng	**Sign & Date**			

NOTE: Date & initial all entries

Date: Friday, 02/05/2008 10:47:44 AM
User: Julie Lecocq

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services **Drawing Name:** BOLT

Job Number: 38994 **Part Number:** D312121

Job Number:

Seq. #:	Machine Or Operation:	Description :
6.0	QC21	FINAL INSPECTION/W/O RELEASE

08/05/08 JH

Comment: FINAL INSPECTION/W/O RELEASE

Job Completion

MF 08-05-07

Form: rprocess

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

QA: N/C Closed: _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	**STEP**	**Description of NC** Section A	**Corrective Action** Section B			**Verification** Section C	**Approval** Chief Eng	**Approval** QC Inspector
			Initial Chief Eng	**Action Description** Chief Eng	**Sign & Date**			

NOTE: Date & initial all entries

DART AEROSPACE LTD	Work Order:	38994
Description: Bolt	Part Number:	D3121-21
Inspection Dwg: D3121 **Rev:** E		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

[X] First Article [ ] Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
0.375	+/-0.010	.372	✓			
0.050 – 0.060	N/A	.054	✓			
0.080	+/-0.010	.075	✓			
10-32UNF3A	N/A	10/32-UNF3A	✓			

Measured by:	RD
Date:	08/05/04

Audited by:	SF
Date:	08/05/04

Prototype Approval:	N/A
Date:	N/A

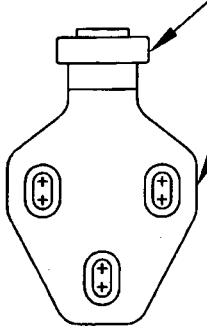
Rev	Date	Change	Revised by	Approved
A	04.02.27	New Issue	KJ/RF	
B	06.03.09	Dwg Rev. updated	KJ/JLM	
C	06.06.14	Dwg Rev. updated	KJ/JLM	
D	08.01.16	Dwg Rev. updated	KJ/EC/DD	

DART

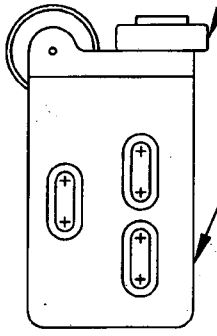
DESIGN	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED	APPROVED	DRAWING NO. D3121	REV. E SHEET 1 OF 10
DATE 07.11.07		TITLE BRACKET ASSEMBLY	SCALE 1:2

A	02.04.15	NEW ISSUE
B	03.01.16	ADD RIDGES; ADD MAT'L PROP; FIX P/N ADD −141/−143/−144/−145/−146
C	04.02.17	ADD CLEARANCE; USE −241 BEARING
D	06.05.17	D3121−25 CAP WAS 1.024, NOW 1.000
E	07.11.07	ADD TOLERANCE TO 0.032 (DETAIL B)

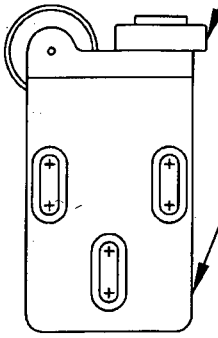
RELEASED
07.11.07



D3121−041 BRACKET ASSEMBLY
(REPLACES PREMIER P/N B30−23000−33)



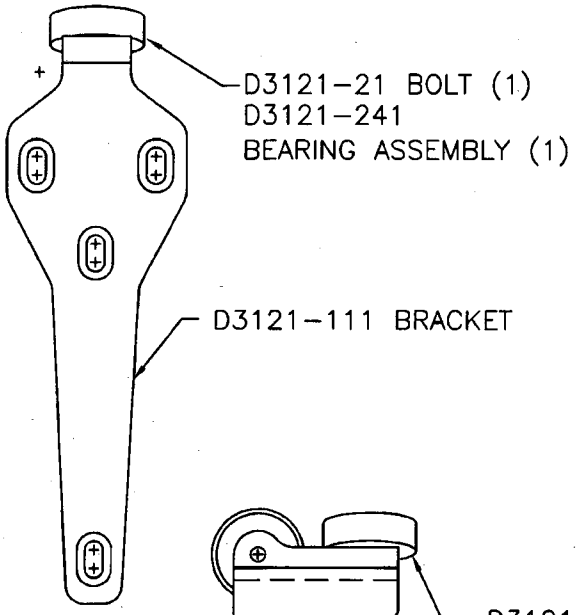
D3121−043 (SHOWN) / D3121−044 (OPPOSITE) BRACKET ASSEMBLY
(REPLACES PREMIER P/N B30−23000−37/−38)



D3121−045 (SHOWN) / D3121−046 (OPPOSITE) BRACKET ASSEMBLY
(REPLACES PREMIER P/N B30−23000−35/−36)

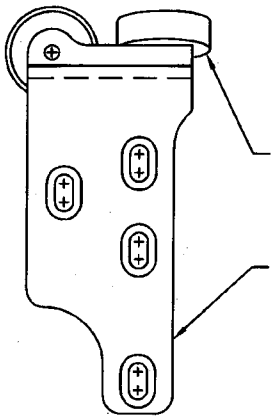
SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 38994

DESIGN	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED	APPROVED	DRAWING NO. D3121	REV. E SHEET 2 OF 10
DATE 07.11.07		TITLE BRACKET ASSEMBLY	SCALE 1:2

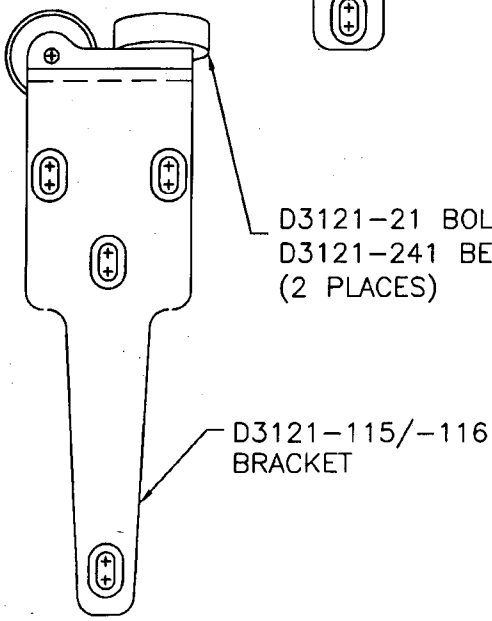


D3121-141 BRACKET ASSEMBLY
(REPLACES PREMIER P/N B30-23001-01)

RELEASED
07.11.07



D3121-143 (SHOWN) / D3121-144 (OPPOSITE) BRACKET ASSEMBLY
(REPLACES PREMIER P/N B30-23000-03/-04)

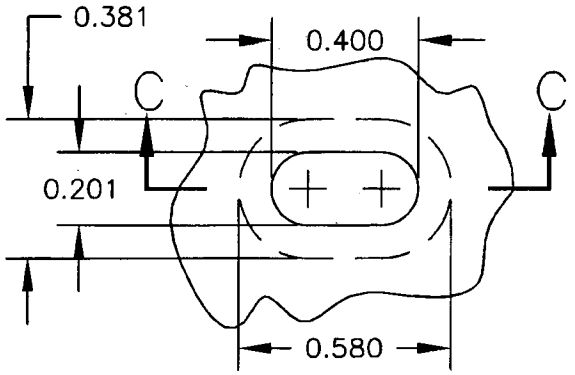


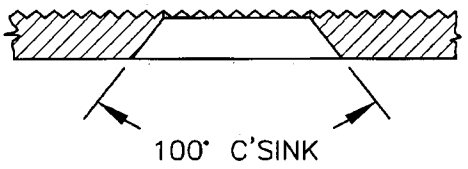
D3121-145 (SHOWN) / D3121-146 (OPPOSITE) BRACKET ASSEMBLY
(REPLACES PREMIER P/N B30-23000-05/-06)

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 38994

DESIGN	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED	APPROVED	DRAWING NO. D3121	REV. E SHEET 3 OF 10
DATE 07.11.07		TITLE BRACKET ASSEMBLY	SCALE 1:1

DETAIL A:
SLOT DETAIL
SCALE 2:1
VIEW ROTATED

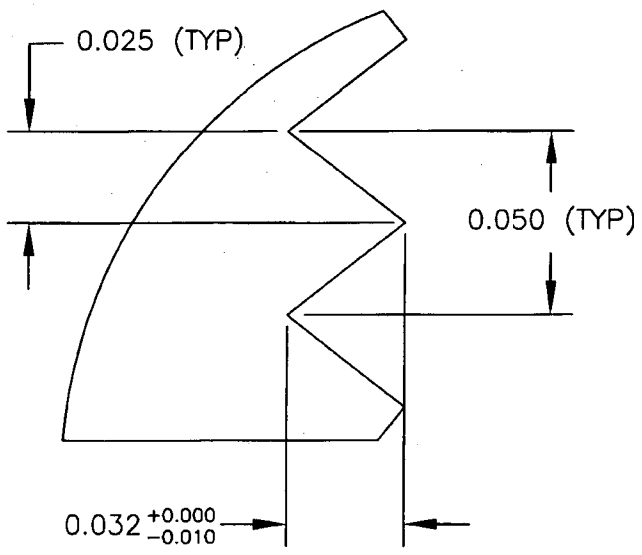




SECTION C–C

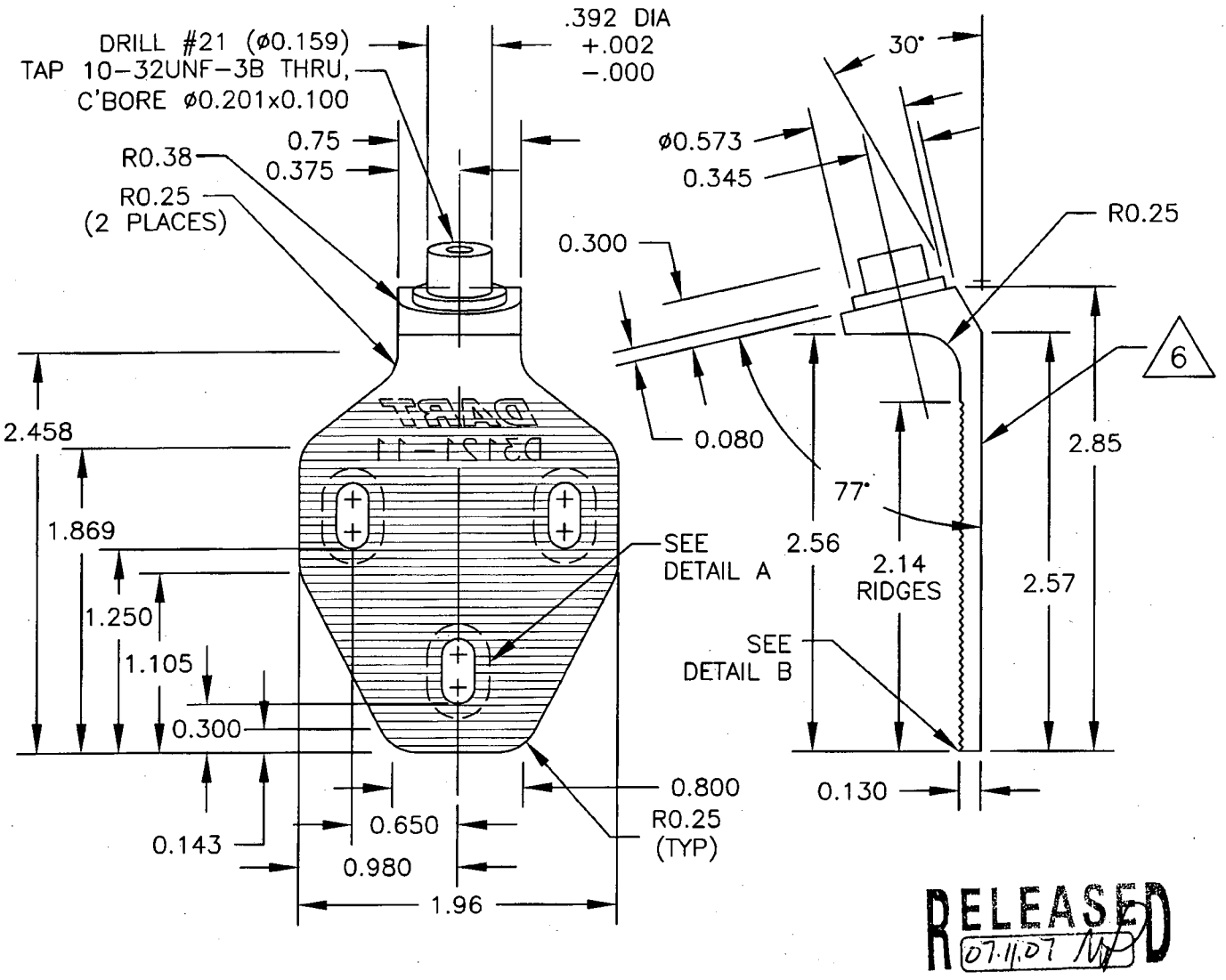
RELEASED
07.11.07

DETAIL B:
RIDGE DETAIL
PARTIAL SECTION
SCALE 1:20



SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 38994

DESIGN	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED	APPROVED	DRAWING NO. D3121	REV. E SHEET 4 OF 10
DATE 07.11.07		TITLE BRACKET ASSEMBLY	SCALE 1:1



RELEASED
07.11.07

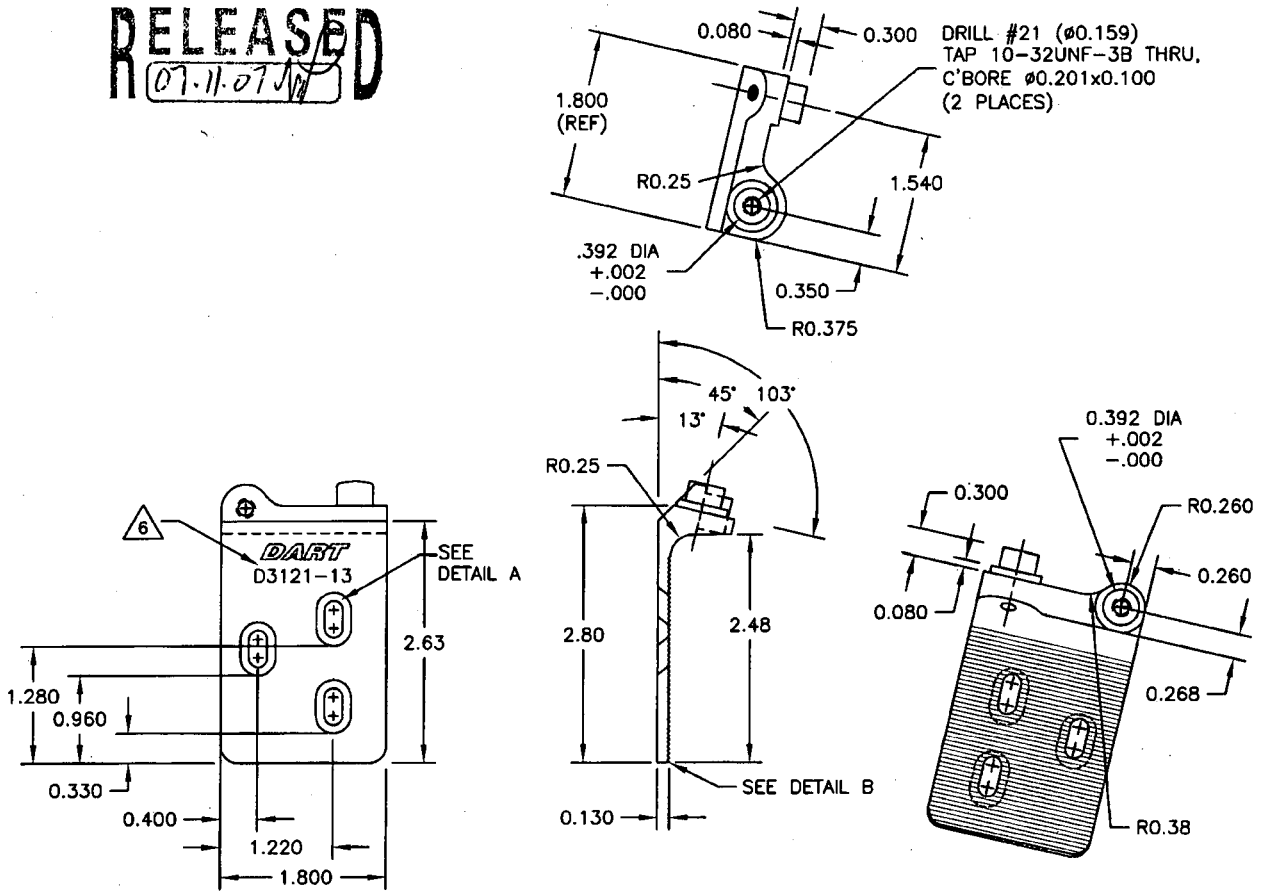
D3121-11 BRACKET

1) MATERIAL: 17-4 SS PER AMS 5604/5643 (REF DART SPEC. M17-4-B)
   MIN ULTIMATE TENSILE = 150 ksi
   MIN YIELD TENSILE = 100 ksi
2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
3) ALL DIMENSIONS ARE IN INCHES
4) BREAK ALL SHARP EDGES 0.005 TO 0.015
5) ENGRAVE DART P/N & LOGO AS SHOWN
6) HOLE IN SPIGOT TO BE CONCENTRIC WITHIN 0.005

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 38994

DESIGN	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED	APPROVED	DRAWING NO. D3121	REV. E SHEET 5 OF 10
DATE 07.11.07		TITLE BRACKET ASSEMBLY	SCALE 1:2

RELEASED
07.11.07



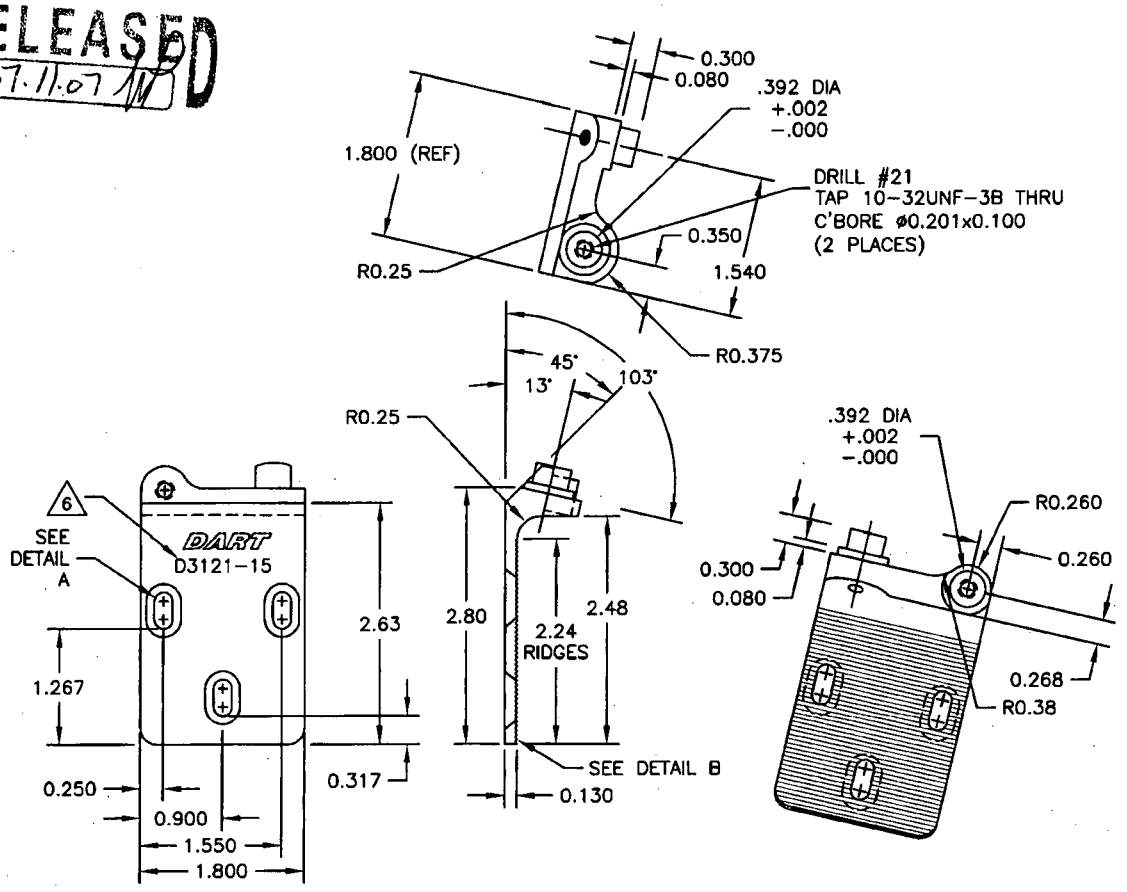
D3121-13 BRACKET (SHOWN)
D3121-14 BRACKET (OPPOSITE)

1) MATERIAL: 17-4 SS PER AMS 5604/5643 (REF DART SPEC. M17-4-B)
   MIN ULTIMATE TENSILE STRENGTH = 150 ksi
   MIN YIELD TENSILE STRENGTH = 100 ksi
2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
3) ALL DIMENSIONS ARE IN INCHES
4) BREAK ALL SHARP EDGES 0.005 TO 0.015
5) ENGRAVE DART P/N & LOGO AS SHOWN
6) HOLE IN SPIGOT TO BE CONCENTRIC WITHIN 0.005

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 38994

DESIGN	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED	APPROVED	DRAWING NO. D3121	REV. E SHEET 6 OF 10
DATE 07.11.07		TITLE BRACKET ASSEMBLY	SCALE 1:2

RELEASED
07.11.07



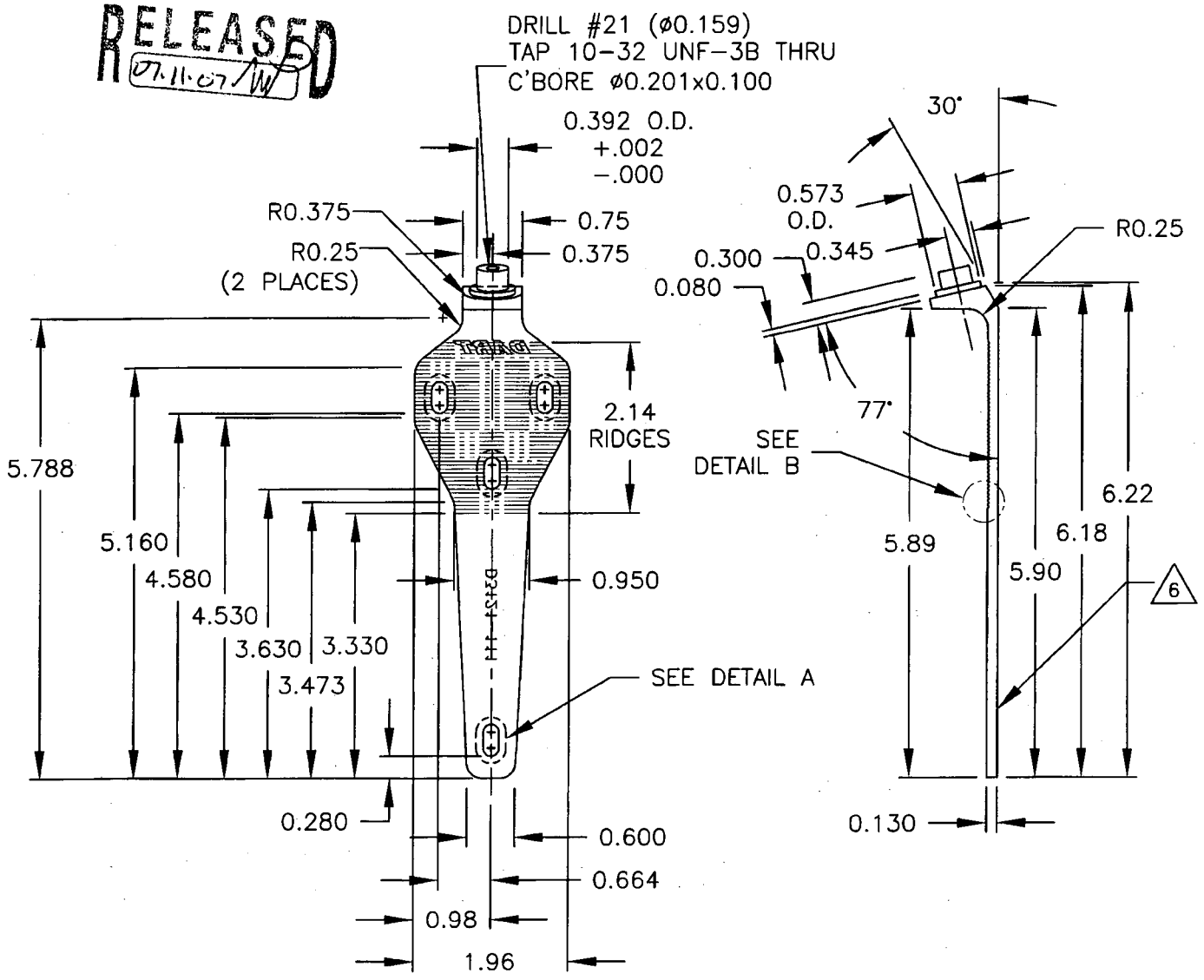
D3121−15 BRACKET (SHOWN)
D3121−16 BRACKET (OPPOSITE)

1) MATERIAL: 17−4 SS PER AMS 5604/5643 (REF DART SPEC. M17−4−B)
   MIN ULTIMATE TENSILE = 150 ksi
   MIN YIELD TENSILE = 100 ksi
2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
3) ALL DIMENSIONS ARE IN INCHES
4) BREAK ALL SHARP EDGES 0.005 TO 0.015
5) ENGRAVE DART P/N AND LOGO AS SHOWN
6) HOLE IN SPIGOT TO BE CONCENTRIC WITHIN 0.005

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 38994

DESIGN	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED	APPROVED	DRAWING NO. D3121	REV. E SHEET 7 OF 10
DATE 07.11.07		TITLE BRACKET ASSEMBLY	SCALE 1:2

RELEASED
07.11.07 MW



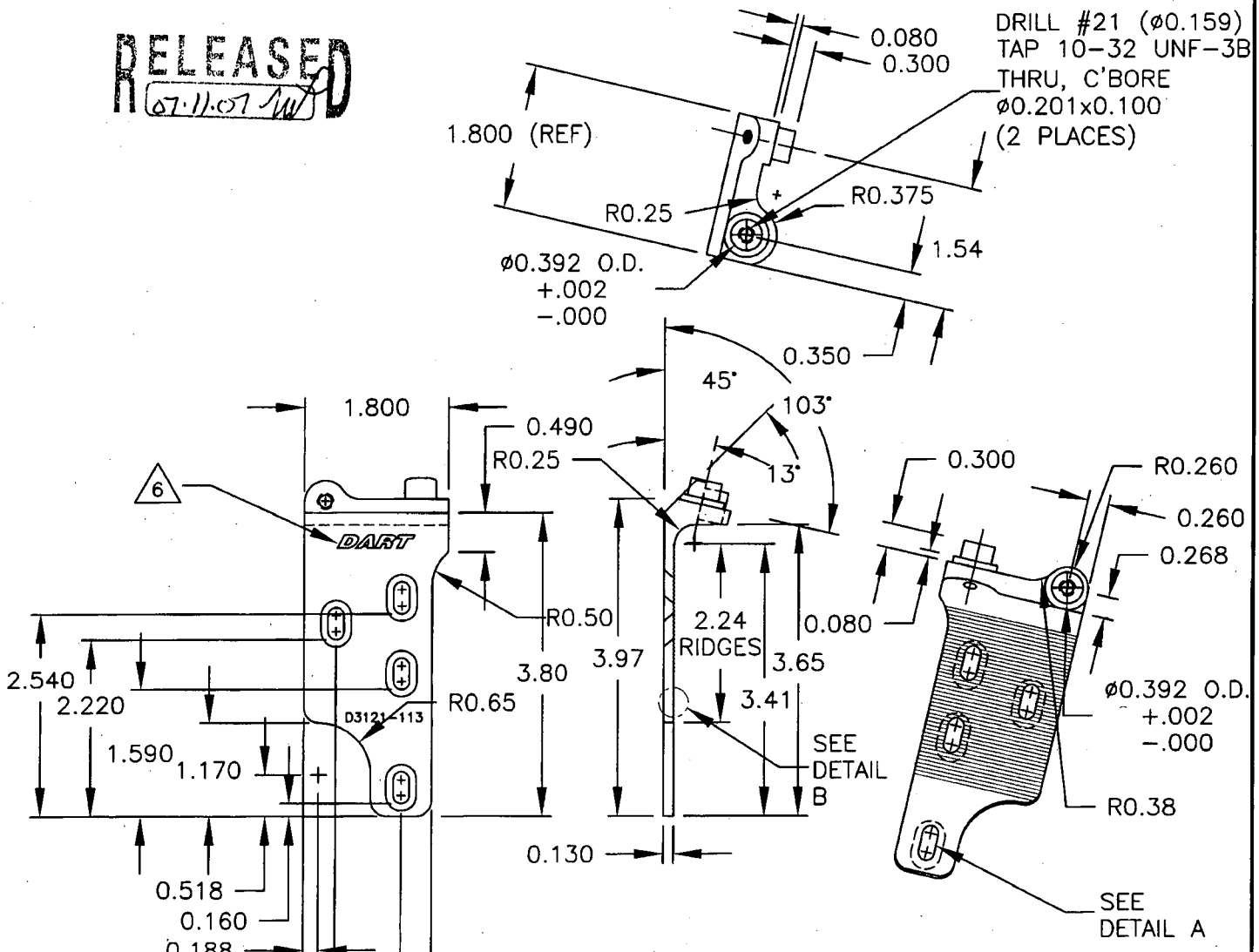
D3121-111 BRACKET

1) REPLACES PREMIER P/N B32-23001-11
2) MATERIAL: 17-4 SS PER AMS 5604/5643 (REF DART SPEC. M17-4-B)
   MIN ULTIMATE TENSILE = 150 ksi
   MIN YIELD TENSILE = 100 ksi
3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHEWISE NOTED
4) ALL DIMENSIONS ARE IN INCHES
5) BREAK ALL SHARP EDGES 0.005 TO 0.015
6) ENGRAVE DART P/N & LOGO IN AREAS SHOWN
7) HOLE IN SPIGOT TO BE CONCENTRIC WITHIN 0.005

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 58994

DESIGN	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED	APPROVED	DRAWING NO. D3121	REV. E SHEET 8 OF 10
DATE 07.11.07		TITLE BRACKET ASSEMBLY	SCALE 1:2

RELEASED
07.11.07 LW



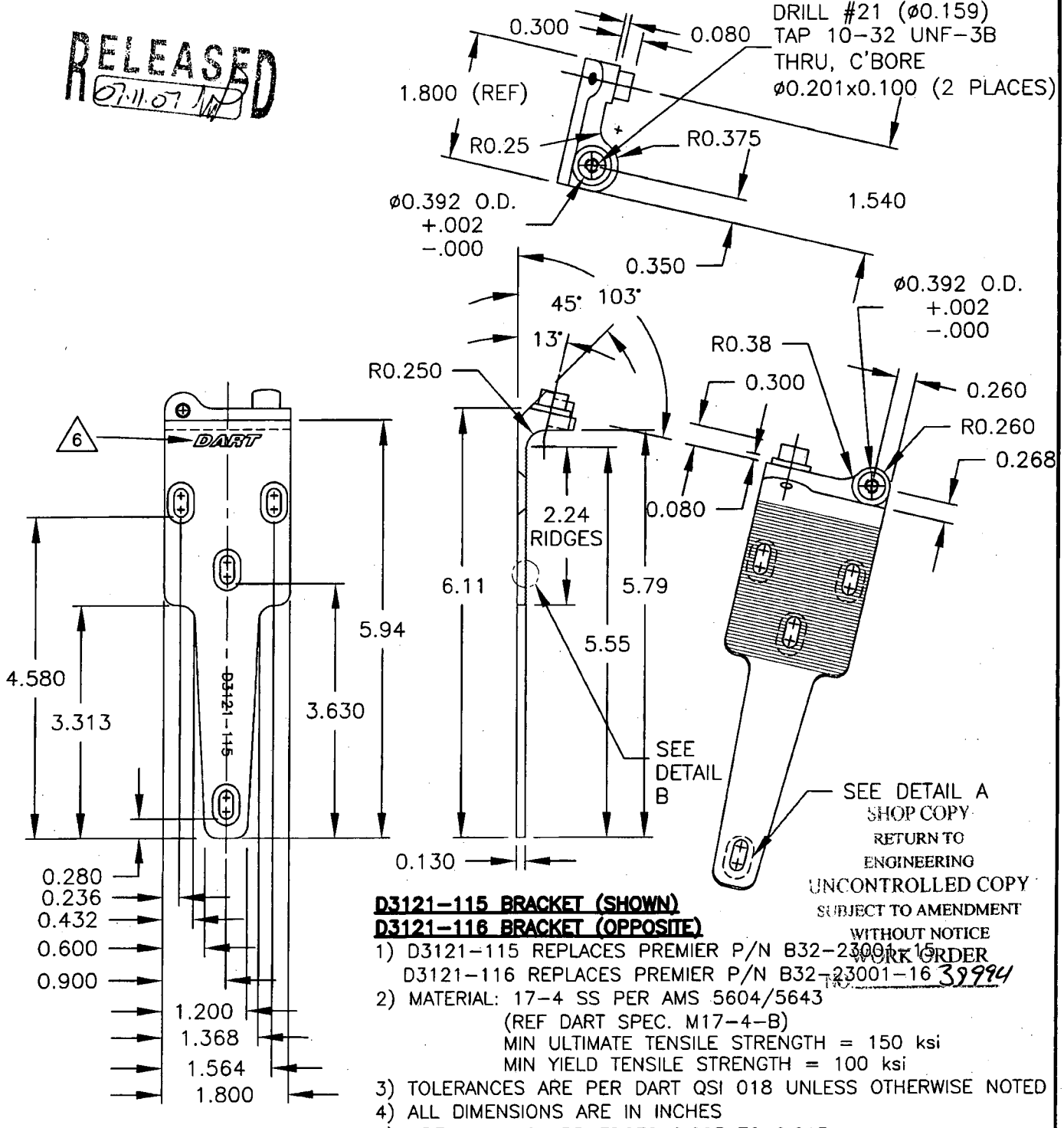
SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 38994

D3121-113 BRACKET (SHOWN)
D3121-114 BRACKET (OPPOSITE)

1) D3121-113 REPLACES PREMIER P/N B32-23001-13
   D3121-114 REPLACES PREMIER P/N B32-23001-14
2) MATERIAL: 17-4 SS PER AMS 5604/5643
   (REF DART SPEC. M17-4-B)
   MIN ULTIMATE TENSILE STRENGTH = 150 ksi
   MIN YIELD TENSILE STRENGTH = 100 ksi
3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
4) ALL DIMENSIONS ARE IN INCHES
5) BREAK ALL SHARP EDGES 0.005 TO 0.015
6) ENGRAVE DART P/N & LOGO IN AREAS SHOWN
7) HOLE IN SPIGOT TO BE CONCENTRIC WITHIN 0.005

DESIGN	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED	APPROVED	DRAWING NO. D3121	REV. E SHEET 9 OF 10
DATE 07.11.07		TITLE BRACKET ASSEMBLY	SCALE 1:2

RELEASED
07.11.07



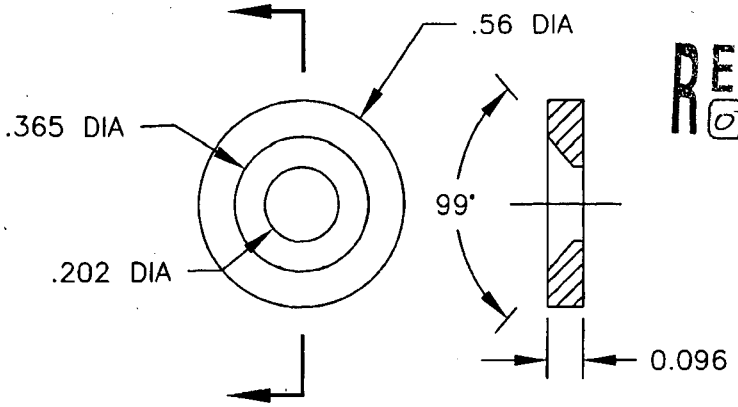
SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE

D3121-115 BRACKET (SHOWN)
D3121-116 BRACKET (OPPOSITE)

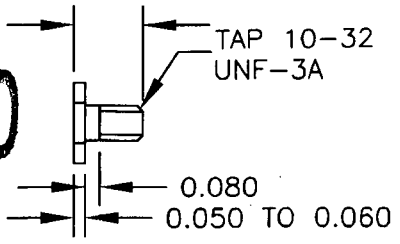
1) D3121-115 REPLACES PREMIER P/N B32-23001-15
   D3121-116 REPLACES PREMIER P/N B32-23001-16
2) MATERIAL: 17-4 SS PER AMS 5604/5643
   (REF DART SPEC. M17-4-B)
   MIN ULTIMATE TENSILE STRENGTH = 150 ksi
   MIN YIELD TENSILE STRENGTH = 100 ksi
3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
4) ALL DIMENSIONS ARE IN INCHES
5) BREAK ALL SHARP EDGES 0.005 TO 0.015
6) ENGRAVE DART P/N & LOGO IN AREAS SHOWN
7) HOLE IN SPIGOT TO BE CONCENTRIC WITHIN 0.005

WORK ORDER NO. 39994

DESIGN	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED	APPROVED	DRAWING NO. D3121	REV. E SHEET 10 OF 10
DATE 07.11.07		TITLE BRACKET ASSEMBLY	SCALE 1:1



RELEASED
07.11.07

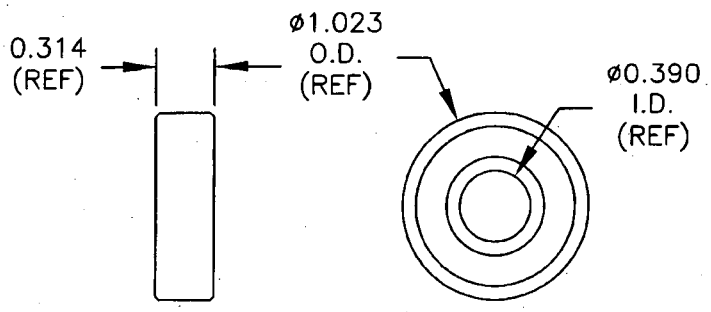


D3121-17 WASHER (SCALE 2:1)

1) REPLACES PREMIER P/N B32-23001-17
2) MATERIAL: AISI 303 SS ROUND BAR, ANNEALED (REF DART SPEC. M303R)
3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
4) ALL DIMENSIONS ARE IN INCHES
5) BREAK ALL SHARP EDGES 0.005 TO 0.015

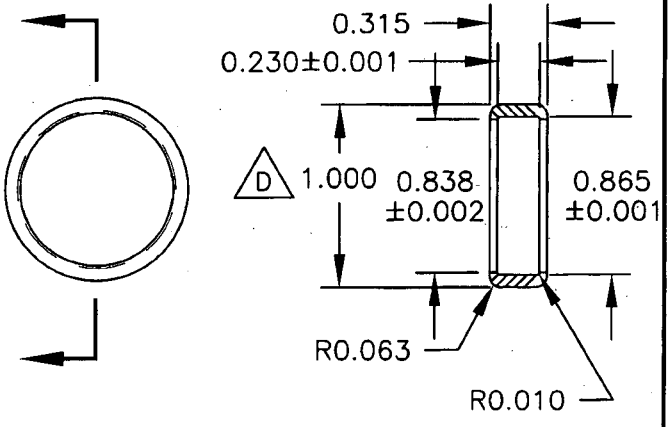
D3121-21 BOLT (SCALE 1:1)

1) MATERIAL: AISI 303 SS HEX, ANNEALED (REF DART SPEC. M303H0.500)
2) FINISH: NONE
3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
4) ALL DIMENSIONS ARE IN INCHES
5) BREAK ALL SHARP EDGES 0.005 TO 0.015



D3121-19 BEARING (SCALE 1:1)

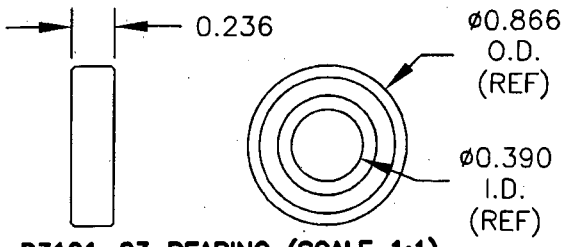
1) POSSIBLE SUPPLIER: KING BEARING P/N 6000-2ZJ/EM
FAFNIR P/N 9100KDD
2) ALL DIMENSIONS ARE IN INCHES



D3121-25 CAP (SCALE 1:1)

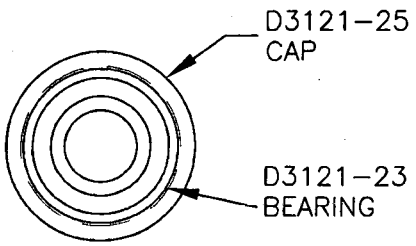
1) MATERIAL: DELRIN ROD, ø1.25 (REF DART SPEC. M-DELRIN-R1.250)
2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
3) ALL DIMENSIONS ARE IN INCHES

SHOP COPY
RETURN TO ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER NO. 38994



D3121-23 BEARING (SCALE 1:1)

1) POSSIBLE SUPPLIER: SKF P/N 61900-2Z
OR KML P/N 6900-ZZ
2) ALL DIMENSIONS ARE IN INCHES



D3121-241 BEARING ASSEBLY (SCALE 1:1)